PEO/SYS COM Conference

10 November 04

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Future Combat Systems

■ Manned Systems

Infantry Carrier Vehicle

Command and Control Vehicle

Mounted Combat System

Recon and Surveillance Vehicle

Non-Line of Sight Cannon

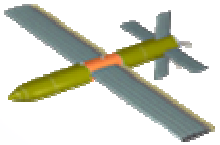
Non-Line of Sight Mortar

FCS Recovery and Maintenance Vehicle

Medical Treatment and Evacuation

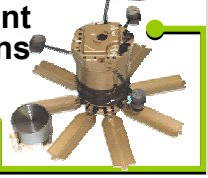
■ Unmanned Air Vehicles

Class I



Class II Class III

Class IV



• Unattended Munitions
  • NLOS LS
  • Intelligent Munitions System

• Unattended Ground Sensors

■ Unmanned Ground Vehicles

Armed Robotic Vehicle
ARV RSTA
ARV Aslt

Small (Manpackable) UGV

ARV-A (L)

MULE: (Countermine)

MULE: (Transport)

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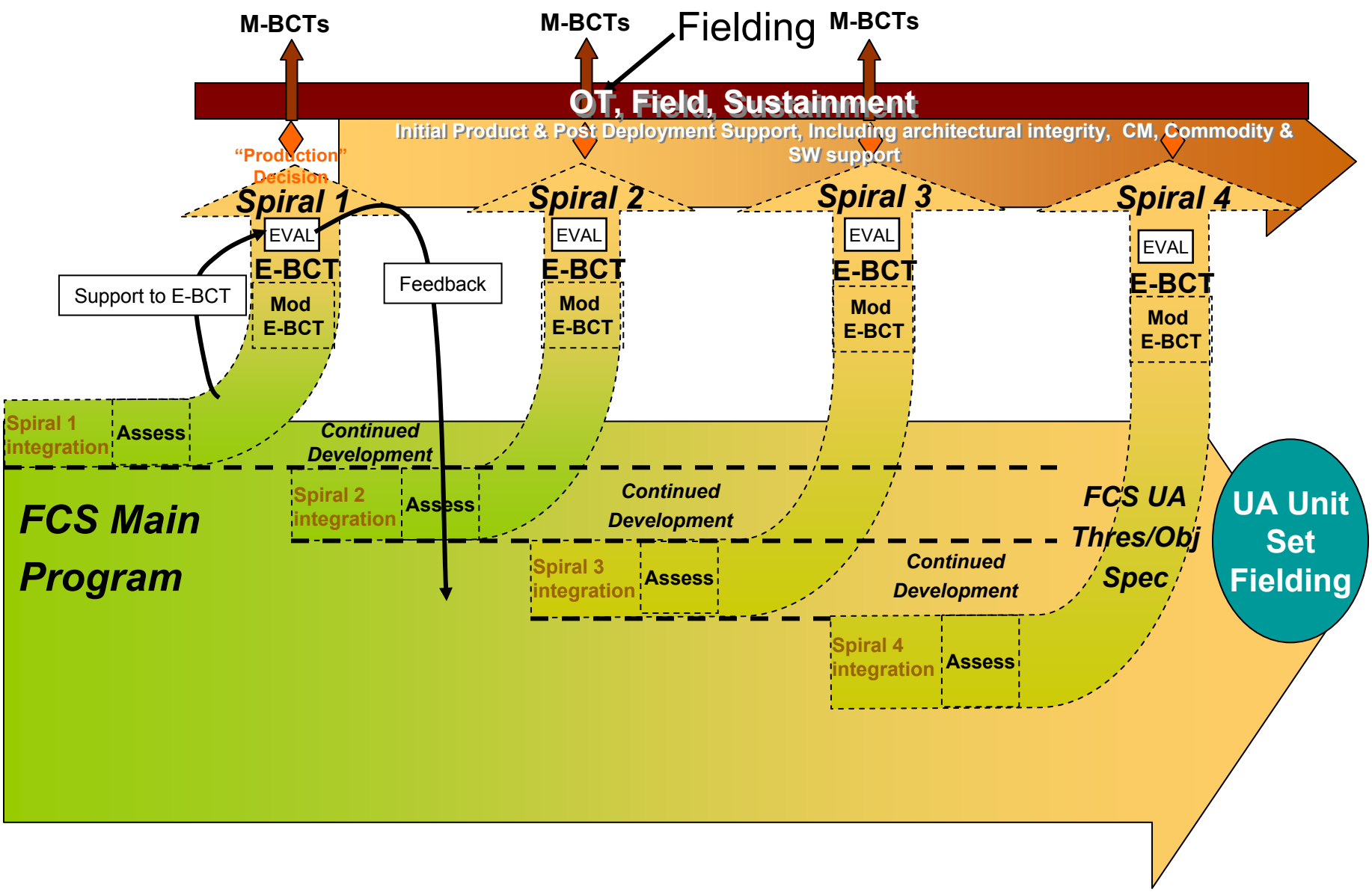
FCS Revised Program



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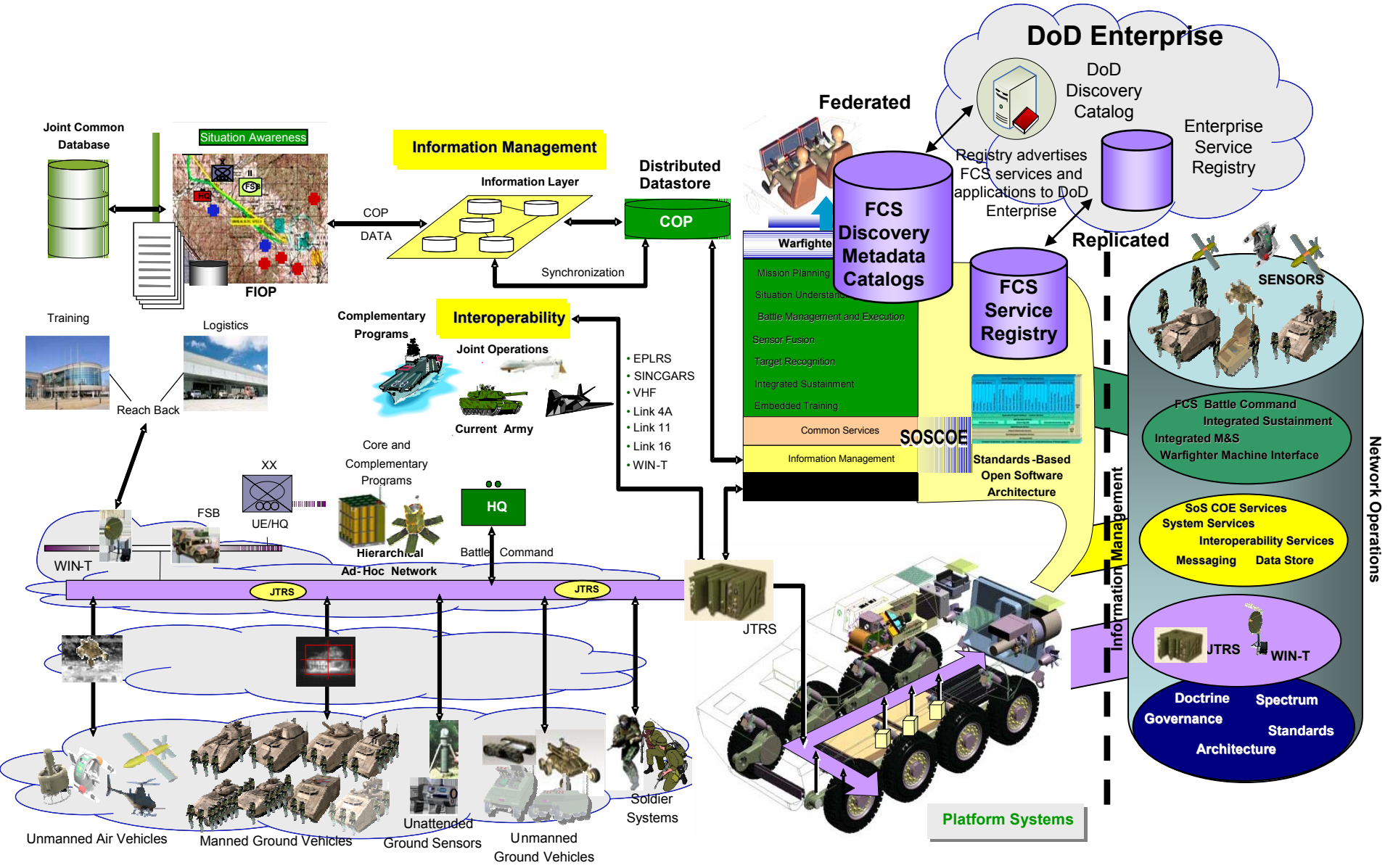
Making tactical data available to the DoD Enterprise

Future Combat System (FCS) Example



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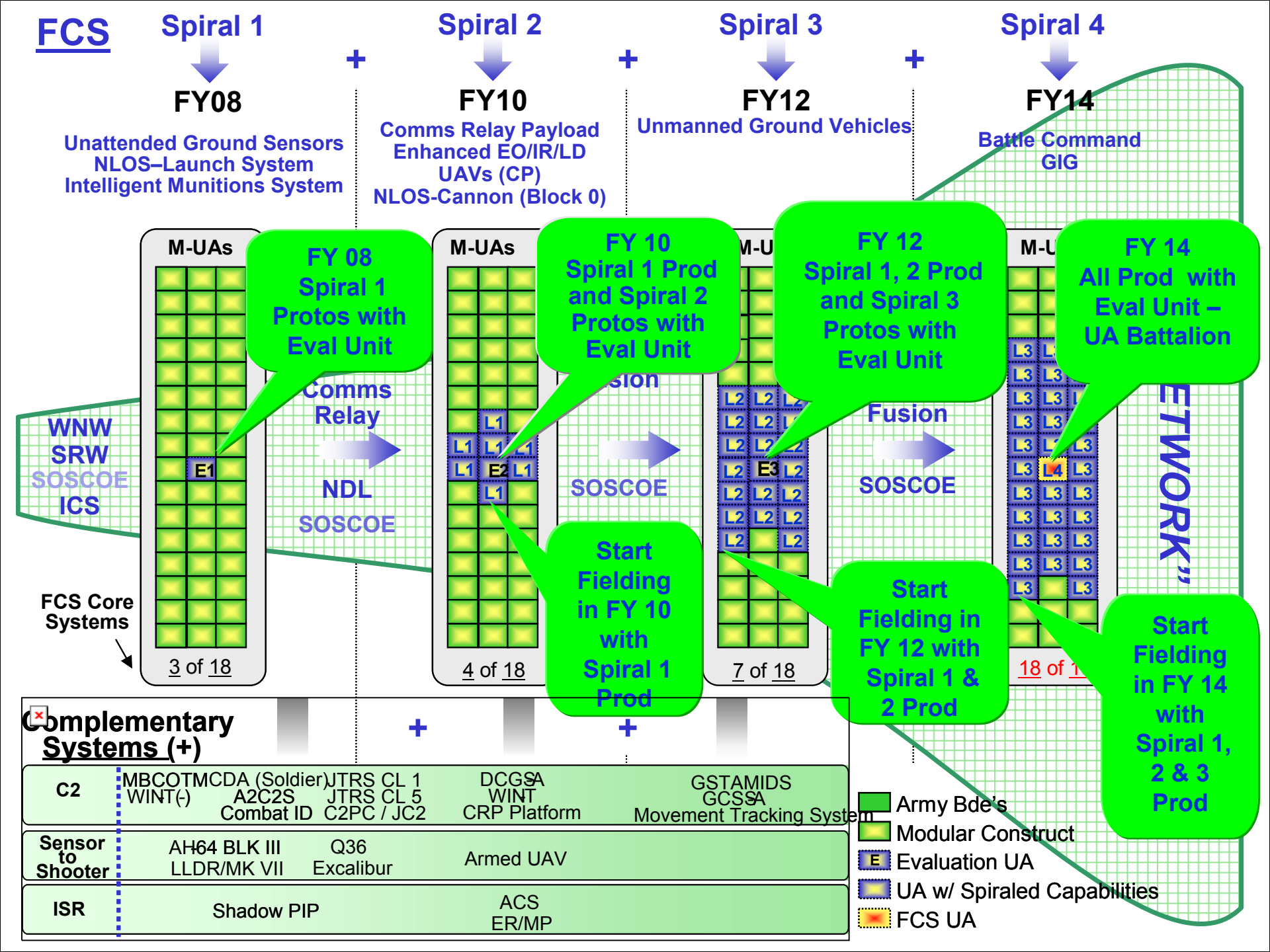
FCS
Spiral 1
Spiral 2
Spiral 3
Spiral 4
FY08
Unattended Ground Sensors
NLOS–Launch System
Intelligent Munitions System
FY10
Comms Relay Payload
Enhanced EO/IR/LD
UAVs (CP)
NLOS-Cannon (Block 0)
FY12
Unmanned Ground Vehicles
FY14
Battle Command
GIG
M-UAs
FY 08
Spiral 1
Protos with
Eval Unit
FY 10
Spiral 1 Prod
and Spiral 2
Protos with
Eval Unit
FY 12
Spiral 1, 2 Prod
and Spiral 3
Protos with
Eval Unit
FY 14
All Prod with
Eval Unit –
UA Battalion
WNW
SRW
SOSCOE
ICS
Comms
Relay
NDL
SOSCOE
SOSCOE
Fusion
SOSCOE
ETWORK"
FCS Core
Systems
3 of 18
4 of 18
7 of 18
18 of 1
Start
Fielding
in FY 10
with
Spiral 1
Prod
Start
Fielding in
FY 12 with
Spiral 1 &
2 Prod
Start
Fielding
in FY 14
with
Spiral 1,
2 & 3
Prod
Complementary
Systems (+)
C2
MBCOTM
WIN-T(-)
CDA (Soldier)
A2C2S
Combat ID
JTRS CL 1
JTRS CL 5
C2PC / JC2
DCGS-A
WIN-T
CRP Platform
GSTAMIDS
GCSS-A
Movement Tracking System
Sensor
to
Shooter
AH-64 BLK III
LLDR/MK VII
Q36
Excalibur
Armed UAV
ISR
Shadow PIP
ACS
ER/MP
Army Bde's
Modular Construct
Evaluation UA
UA w/ Spiraled Capabilities
FCS UA

FCS Networks Review Task
NII OIPT Leader's Guidance

- **OIPT Leader's Guidance—promulgated to Networks WIPT and Teams**
- **Review FCS Networks using Net-Centric Checklist as departure point**
- **Utilize OASD(NII)/MITRE Systems Engineering Team for Net-Centric Technical Review**

NII OIPT Objectives

- **Understand Overall CONOPS for C2, Comms, and ISR**
- **Outline of Networking & Transport (address reach-back, latency, etc)**
- **Understand Data Strategy**
  - Access to both Internal and External Databases (NGA, GCCS-J, JC2)
  - Assuming Connectivity—can Army fully access all data and applications via the Net
  - Impact of limited bandwidth and throughput
  - Knowledge Management Systems
  - Disconnected Operations
- **FCS Network Baseline and Migration Strategy**
  - Understanding the End-State
  - Identify Opportunities for Increasing Capability

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Net-Centric Tenets

(OASD/NII Net-Centric Checklist v 2.1.3., 12 May 04
and Corresponding NII/Mitre System Engineering Review Team)

- **Data Tenets—Data & Applications (DA) Team**
  - Make Data Visible
  - Make Data Understandable
  - Make Data Accessible
  - Make Data Trustable
  - Make Data Interoperable
  - Be Responsive to User Needs

- **Service Tenets—Enterprise Services (ES) Team**
  - Service-Oriented Architecture
  - Open Architecture
  - Scalability
  - Availability
  - Accommodate Heterogeneity
  - Decentralized O&M
  - Enterprise Service Management

- **Information Assurance—Info Assurance (IA) Team**
  - Identify Management and Authentication
  - Mediate Security Assertions
  - Cross Security Domains Exchange
  - Manage Identity and Privileges
  - Encryption and HAIPE
  - Employment of Wireless Technologies

- **Transport Tenets—Transport (T) Team**
  - IPv6
  - Packet Switched infrastructure
  - Layering, Modularity
  - Transport Goal
  - Network Connectivity
  - Concurrent Transport of Information Flows
  - Differentiated Management of Quality of Service
  - Inter Network Connectivity
  - Joint Technical Architecture (JTA)
  - Joint Net Centric Capabilities
  - Operations and Management of Transport and Services

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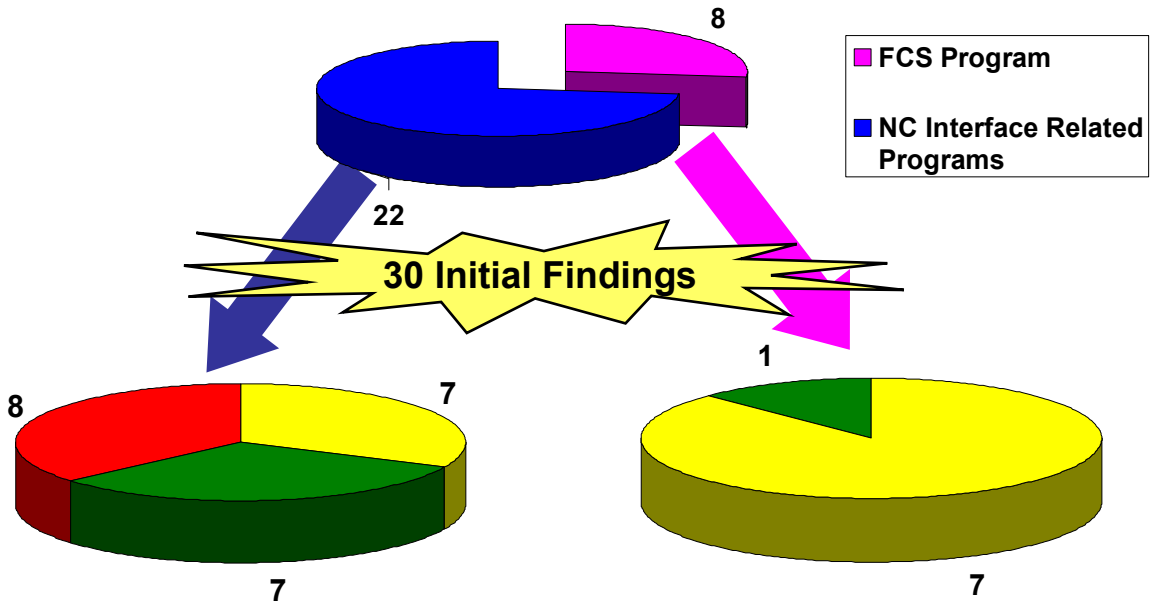
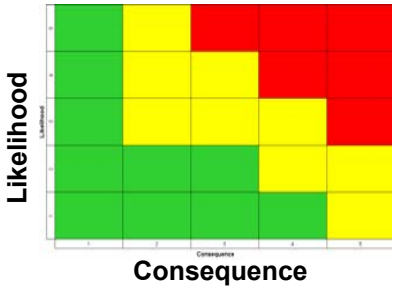
Breakdown of Initial Findings

	Interface	FCS
Technical	10	5
Resources	6	0
Synchronization	6	3

Total FCS NC Assessment Findings





Related to NC Interface Programs

Way Forward

- Identify POC for Actions
- Synchronize with FCS Plans
- Or Understand Disconnects
  - Content
  - Programmatic
- Identify specific actions
- FCS Aligns or Goes Own Way
- Identify Ramifications

Related to FCS Program

Way Forward

- Identify POC for Actions
- Understand Disconnects
  - Content
  - Programmatic
- Identify specific actions for FCS Program

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FCS Networks Review
Way Ahead

FY03	FY04	FY05	FY06	FY07
O N D J F M A M J J A S	O N D J F M A M J J A S	O N D J F M A M J J A S	O N D J F M A M J J A S	O N D J F M A M J J A S

ADM

Dr Lamartin's Letter

Mr Landon's Guidance

DAB Update

MS B Update

Phase 1 JFIRT

- OSD assess FCS C4ISR SoS
- Determine readiness for entry into the SDD phase
  - JFIRT Phase 1 - Mar to May 03. Discovery and assessment of findings
  - JFIRT Phase 2 - Jun to Oct 03. Resolution and path ahead definition for findings
  - 5 Nov OSD(ATL) Outbrief to OIPT
- JFIRT Phase 3 Focused on NDL

Phase 2 NC Assessment

NC OIPT

- Assess FCS Network using OSD/NII NC Checklist
- Identify findings related to Interface Programs and internal to FCS
- Propose risk mitigation steps
- Provide feedback to improve NC Checklist

Phase 3 - Finding Resolution

- Complete actions required for an MS B Update in May 05
- Update FCS ISP to reflect appropriate NC path forward recommended by NC Review
- Continue to Assess MBCT migration strategy and readiness for First FCS Spiral
- Periodic Networks WIPT and IIPT meetings to assess findings and actions--Network OIPT prior to MS B update
- Review Key Interface Programs for consistency

Recommend Joint AT&L and NII WIPT to continue to resolve findings and provide guidance during Phase 3

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